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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,639	09/28/2000	Gary Dan Dotson	00AB154	7884

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Allen-Bradley Company Inc
Attention: John J Horn
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EXAMINER	
WANG, JIN CHENG	
ART UNIT	**PAPER NUMBER**
2672	

DATE MAILED: 11/19/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/672,639	DOTSON ET AL./	
	Examiner	Art Unit	
	Jin-Cheng Wang	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14 and 22-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14, 22-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Response to Amendment

The amendments filed on 10/07/2003 have been entered. Claims 1 and 22 have been amended. Claims 15-21 have been canceled. Claims 1-14 and 22-29 are pending in the application.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 28 recites the limitation "the output device" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-14 and 22-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Tjandrasuwita U.S. Patent No. 6,198,469 (hereinafter Tjandrasuwita).

5. Claim 1:

Tjandrasuwita teaches a raster engine (flat panel interface 113 of figure 2) for interfacing a frame buffer in a computer system (figure 1) to a plurality of disparate display types over a single interface (e.g., column 4, lines 52-61), comprising:

At least one control register programmable via the computer system to select a display mode (e.g., column 5, lines 58-65, e.g., the display mode can be selected at any given time; see figure 2, and column 6, lines 1-20);

A programmable grayscale generator (e.g., figures 2-4 and column 5, lines 11-67, column 6, lines 1-67, column 8, lines 1-18) to generate grayscale formatted data (e.g., column 3, lines 60-67; column 8, lines 28-35) for a plurality of disparate display types and formats (e.g., Dual Panel Dual Scan Super Twisted Nematic LCD Panels and single STN LCD panels; column 11, lines 15-51) from pixel data in the frame buffer (e.g., column 4, lines 50-67; column 5, lines 1-47), wherein the grayscale generator generates grayscale data according to the selected display mode (e.g., column 5, lines 58-65, the display mode can be selected at any given time; see also figure 2, and column 6, lines 1-20, to generate gray scale shading using time or frame modulation technique and the different gray shades can be generated by turning on and off the pixel; see for example, column 6, lines 48-60); and

A logic device (e.g., multiplexor 208) with a parallel output (e.g., for different types of LCD display monitors), the logic device (SEL2 which may originate from a control register that is programmed by the CPU as indicated by the user) adapted to select appropriate pixel data from the grayscale generator (e.g., figures 2-4) in accordance with a selected display mode (see the abstract of the reference), and to provide the selected pixel data at the parallel output (e.g., figure 2, and column 6, lines 2-20).

Claim 2:

The claim 2 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of a grayscale look up table control register programmable by the computer system. However, the Tjandrasuwita reference further discloses the claimed limitation of a grayscale look up table control register programmable by the computer system (i.e., the dithering engine 204 of figure 2, and the mapping scheme may be designed to be programmable as well, column 7, lines 60-67).

Claim 3:

The claim 3 encompasses the same scope of invention as that of claim 2 except additional claimed limitation of the grayscale look up table comprising a three dimensional matrix having a frame dimension (column 11, lines 52-67, e.g., FPFC[3:0]), a vertical dimension (FPVC[3:0]), a horizontal dimension (FPHC[3:0]), and a plurality of data entries associated with each combination of frame, vertical, and horizontal dimensions, and wherein the data entries comprise a plurality of matrix position enable bits adapted to indicate whether a pixel in the display is energized (column 9, lines 43-62).

Claim 4:

The claim 4 encompasses the same scope of invention as that of claim 3 except additional claimed limitation of the grayscale generator further comprising a frame counter, a vertical counter, and a horizontal counter, and wherein the grayscale look up table data entries define dithering operation for a pixel value according to the frame counter, the vertical counter, and the horizontal counter. However, the Tjandrasuwita reference further discloses the claimed limitation of the grayscale generator (e.g., figures 2-4 and column 5, lines 11-67, column 6, lines 1-67, column 8, lines 1-18) further comprising a frame counter, a vertical counter, and a horizontal counter (column 2, lines 47-62), and wherein the grayscale look up table data entries (Table 1 of column 7) define dithering operation for a pixel value according to the frame counter, the vertical counter, and the horizontal counter (column 2, lines 47-62).

Claim 5:

The claim 5 encompasses the same scope of invention as that of claim 4 except additional claimed limitation of the frame dimension comprising one of 3 and 4, wherein the vertical dimension comprises one of 3 and 4, and wherein the horizontal dimension comprises one of 3 and 4. However, the Tjandrasuwita reference further discloses the claimed limitation of the frame dimension (FPFC[3:0], see also column 9, line 64), wherein the vertical dimension comprises one of 3 and 4 (FPVC[3:0], column 9, line 57), wherein the horizontal dimension comprises one of 3 and 4 (FPHC[3:0], column 9, line 58).

Claim 6:

The claim 6 encompasses the same scope of invention as that of claim 5 except additional claimed limitation of the grayscale generator adapted to translate 3 bits of pixel data for a pixel

in the display to generate grayscale formatted data for the pixel to provide 8 shades of gray according to the selected display mode and the grayscale lookup table data entries. However, the Tjandrasuwita reference further discloses the claimed limitation of the grayscale generator (e.g., figures 2-4 and column 5, lines 11-67, column 6, lines 1-67, column 8, lines 1-18) adapted to translate 3 bits of pixel data for a pixel in the display to generate grayscale formatted data for the pixel to provide 8 shades of gray according to the selected display mode (column 8, lines 3-18) and the grayscale lookup table data entries (Table 1 of column 7). It is noted that in the two-to-one mapping of the mapping of 16 possible gray-level inputs to 8 gray-levels, wherein the 4 bits of pixel data can be translated into 3 bits (Table 1 of column 7).

Claims 7-8:

Claims 7-8 is a rephrasing of claims 5-6 in a method form. The claim is rejected for the same reason as set forth in claims 5-6.

Claim 9:

Claim 9 is a rephrasing of claim 4 in a method form. The claim is rejected for the same reason as set forth in claim 4.

Claim 10:

The claim 10 encompasses the same scope of invention as that of claim 6 except additional claimed limitation of the grayscale generator programmable by a user via an application program in the computer system. However, the Tjandrasuwita reference further discloses the claimed limitation of the grayscale generator (e.g., figures 2-4 and column 5, lines 11-67, column 6, lines 1-67, column 8, lines 1-18) programmable by a user via an application program in the computer system, e.g., the apparatus generates gray scale shading data in

response to input color data that is programmable (see the abstract of the reference and column 4, lines 1-61 of the specification).

Claim 11:

The claim 11 encompasses the same scope of invention as that of claim 10 except additional claimed limitation of the application program being a video driver. However, the Tjandrasuwita reference further discloses the claimed limitation of the application program being a video driver (column 4, lines 9-61). The Office interprets the integrated processor circuit 101 as a video driver.

Claim 12:

Claim 12 is a rephrasing of claim 10 in a method form. The claim is rejected for the same reason as set forth in claim 10.

Claim 13:

The claim 13 encompasses the same scope of invention as that of claim 6 except additional claimed limitation of the display type. However, the Tjandrasuwita reference further discloses the claimed limitation of the display type (column 4, lines 52-61).

Claim 14:

Claim 14 is a rephrasing of claim 13 in a method form. The claim is rejected for the same reason as set forth in claim 13.

6. Claim 22:

The Tjandrasuwita reference has taught a raster engine (i.e., the flat panel interface 113 of figure 2) for interfacing a frame buffer in a computer system to one of a plurality of disparate display types (e.g., column 4, lines 52-61), comprising:

Means for selecting a display mode (e.g., the mode selecting circuit 403, see also column 5, lines 58-65);

Means for obtaining pixel data from the frame buffer (e.g., figure 1) and programmable (e.g., the dithering engine 204 and the mapping scheme of column 7 may be designed to be programmable as well, see also column 8, lines 3-67) via the computer system to generate grayscale formatted data for a plurality of disparate display types and formats including the selected display mode (e.g., Dual Panel Dual Scan Super Twisted Nematic LCD Panels and single STN LCD panels; column 11, lines 15-51; see also column 5, lines 58-65, the display mode can be selected at any given time; see also figure 2, and column 6, lines 1-20, to generate gray scale shading using time or frame modulation technique and the different gray shades can be generated by turning on and off the pixel; see for example, column 6, lines 48-60); and

A parallel output means (e.g., multiplexor 208 having a parallel output) for selecting appropriate pixel data from the means for obtaining pixel data for the selected display mode (e.g., figures 2-4), and for providing the selected pixel data at a parallel output according to the selected display mode (e.g., figure 2, and column 6, lines 2-20).

Claim 23-25:

The claim limitation as recited in each of the claims 23-25 encompasses the same scope of invention as that of the claims 3 and 4 in except additional claim limitation of "the grayscale

look up table control register". However, Tjandrasuwita further discloses the claim limitation of a grayscale look up table control register programmable by a computer system (e.g., the dithering engine 204 and the mapping scheme of column 7 may be designed to be programmable as well, and see also column 8, lines 3-67).

Claim 26:

The claim limitation as recited in the claim 26 encompasses the same scope of invention as that of claim 6. The claim is rejected for the same reason as set forth respectively in claim 6.

Claim 27:

The claim limitation as recited in the claim 27 encompasses the same scope of invention as that of claim 5. The claim is rejected for the same reason as set forth respectively in claim 5.

Claim 28:

The claim limitation as recited in the claim 28 encompasses the same scope of invention as that of claim 1 except additional claim limitation of "the output device comprising two or more of a pixel shifting logic system, a YcrCb encoder, and a DAC". However, Tjandrasuwita further discloses the claim limitation of the output device comprising two or more of a pixel shifting logic system, a YcrCb encoder, and a DAC (e.g., block 208 of Figure 2).

Claim 29:

The claim limitation as recited in the claim 29 encompasses the same scope of invention as that of claim 22 except additional claim limitation of "the output device comprising two or more of a pixel shifting logic system, a YcrCb encoder, and a DAC". However, Tjandrasuwita

further discloses the claim limitation of the output device comprising two or more of a pixel shifting logic system, a YcrCb encoder, and a DAC (e.g., block 208 of Figure 2).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (703) 605-1213. The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-6606 for regular communications and (703) 308-6606 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 395-3900.

jcw
November 6, 2003

MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
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